i-STAT® TECHNICAL BULLETIN

UPDATING ANALYZER SOFTWARE

JAMMLITE UTILITY

The JammLite Utility must be used to update software in the i-STAT®1 Analyzer and can be used to update the i-STAT Portable Clinical Analyzer and the Blood Analysis Module. The JammLite procedure is simple with just one screen for all analyzer types and software versions.

To use this utility, you must have a computer with Windows® 95 or higher. An i-STAT Central Data Station Version 5 or a Point of Care Central Workstation meet this requirement and can be used. An i-STAT/DE server is not recommended for use with this utility.

If this is the first time you are updating your analyzer, follow the Detailed Procedure. If you just need reminders, follow the Summary of the Procedure.

SUMMARY OF THE JAMMLITE PROCEDURE

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* It is not neccessary to connect a serial Downloader if using network protocol to update i-STAT 1 Analyzer.

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DETAILED JAMMLITE PROCEDURE

Step (1) *Save Stored Results & Check Battery Voltage*

Save Data: All test records are erased in the i-STAT Portable Clinical Analyzer (series 200) when the application software is updated. Download each analyzer to the Central Data Station (CDS) program or ensure that all test records have been transcribed before updating a Portable Clinical Analyzer. Test records are not erased from the i-STAT1 Analyzer (series 300).

- There are two types of software in the analyzers: application (JAMS) and CLEW.
- The Product Update lists the software that is to be updated.
- Test records will not be erased if only the CLEW software is updated.

Check Battery Voltage: Analyzers consume power during the software update. For the software update, the battery voltage should be well above the 7.5 V point at which the low battery message is displayed.

Step (2) *Disable Customization on CDS*

If you do not use Customization or Customization is disabled, skip this step. If you use Central Data Station Version 5 and your CDS is on Version 5.18a or higher, skip this step.

If you are not sure if Customization is disabled, follow the steps below. The steps to disable customization differ for the Central Data Station Version 4 and Central Data Station Version 5. If you are not sure which CDS you have, click **Help** on the main menu bar, then click on **About....**

Central Data Station Version 4:

1. Click on the i-STAT Analyzer Customization Profile Utility icon or access by clicking Programs and i-STAT CDS.
2. Type in the Password. The default password is istat.
3. Click on File on the menu bar.
4. Click on Disable Customization.
5. Click Yes to the confirmation messages and the Utility will close.

Central Data Station Version 5:

1. Click on Administration in the main menu bar.
2. Click on Customization.
3. Type in the Password. The default password is istat.
4. Click off the checkmark in the box beside Enable Customization at the top left of the window.

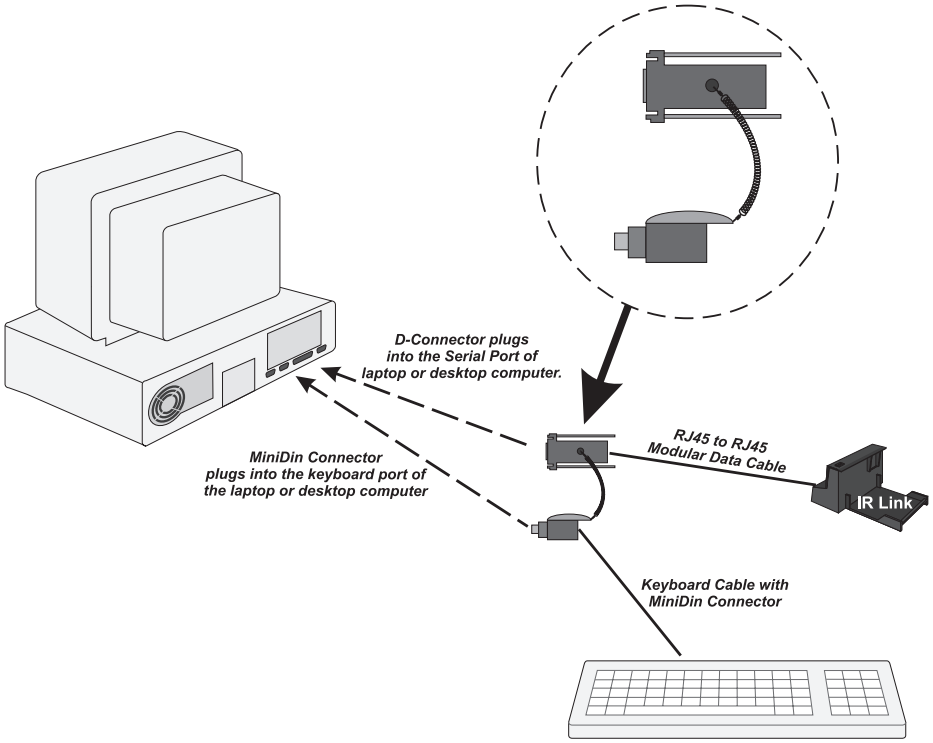
Step (3) *Shut Down All Programs*

Exit the CDS and all other open programs.

Step (4) ***Connect the IR Link and/or Downloader***

IR Link connection:

- If using a Central Data Station Version 5, a Central Data Station Version 4 with digiboard, or any other computer using Windows 95 or above, connect the IR Link to a 9 pin COM port using an i-STAT Software Update Kit as illustrated below.


D-Connector plugs into the Serial Port of laptop or desktop computer.
MiniDin Connector plugs into the keyboard port of the laptop or desktop computer
RJ45 to RJ45 Modular Data Cable
IR Link
Keyboard Cable with MiniDin Connector

- If using a Central Data Station Version 4 with quad cards: Connect the IR Link to COM5 on the back of the CDS using a Modular Data Cable (i-STAT grey flat cable with RJ45 connectors). COM5 is first port from the inside on the lower row.

Blood Analysis Module connection:

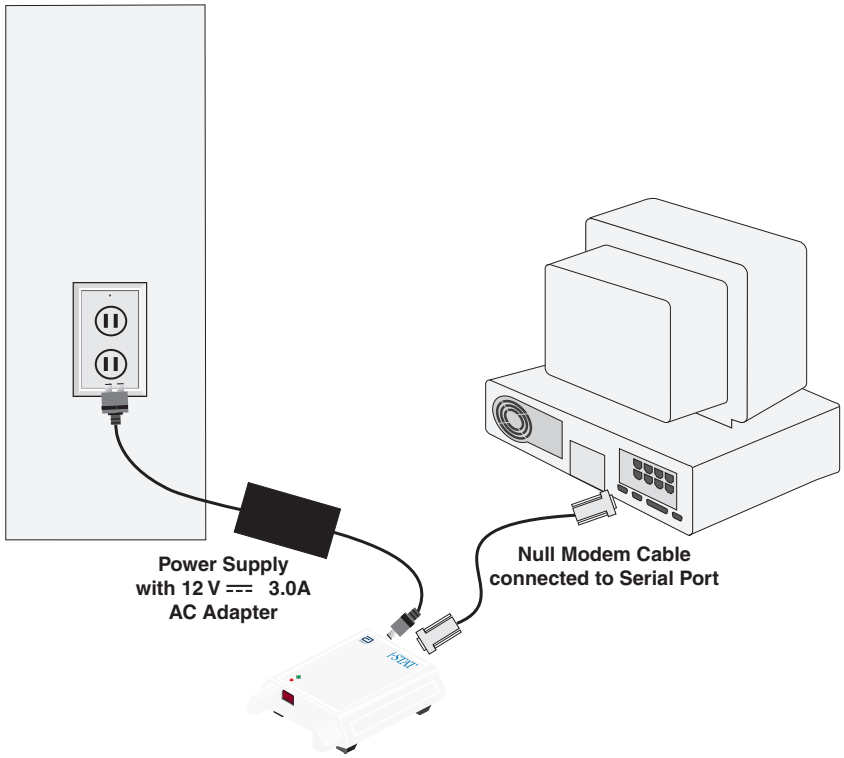
- If using a Central Data Station Version 4, connect the BAM to COM5 on the back of the CDS using a Modular Data Cable (i-STAT grey flat cable with RJ45 connectors).

- If using a Central Data Station Version 5 or another computer, connect the BAM to a 9 pin COM port using the D-Connector and Mini Din Connector from an i-STAT Software Update Kit.

Note: Do not connect the BAM until instructed to do so by the JammLite program.

Serial Downloader connection:

- Connect a serial Downloader to a COM port using a DB9-DB9 Null Modem cable and plug the Downloader's power adapter into a wall outlet.



Network Downloader connection:

- Connect a network Downloader to the network using a network patch cable and plug the Downloader's power adapter into a wall outlet. The computer must also be connected to the network. The computer must support the TCP/IP network protocol.

Step (5) ***Access the Command Prompt***

- Click Start in the lower left corner of the window.
- Click Run.
- Type: **command** and press the Enter key.

Note: If you do not have access to the **Run** command, contact your Point-of-Care Coordinator or Information Technology (IT) department.

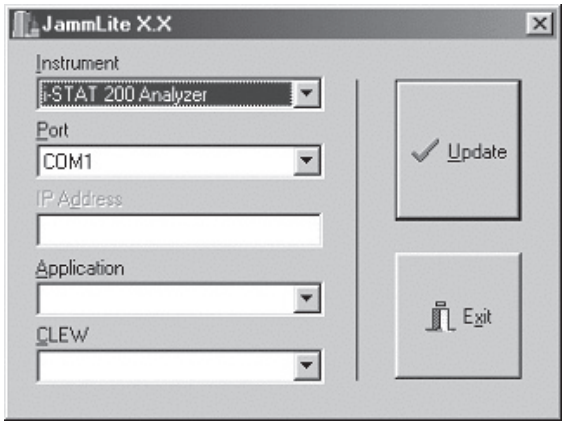
Step (6) ***Transfer the Files***

Place the JAMS diskette into the A:drive. At the Command prompt, type **A:transfer** and press the Enter key.

Step (7)

Using the JammLite Utility

1. At the C:\>bins prompt, type **jammlite** and press the Enter key. The following screen will be displayed with the new application and CLEW.



X.X is the current version of JammLite software.

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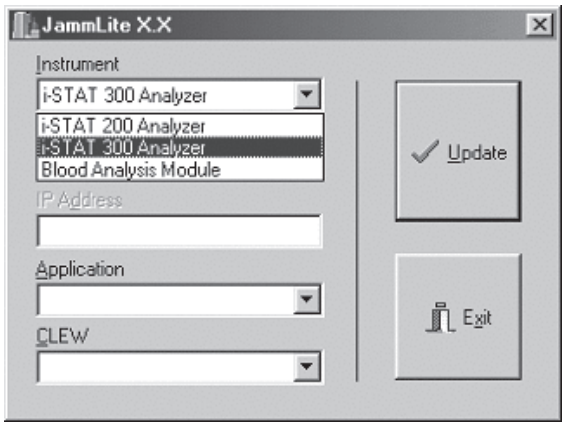
2. Select the appropriate instrument from the Instrument drop-down list.



Note: i-STAT 200 Analyzer is the Portable Clinical Analyzer and the i-STAT 300 Analyzer is the i-STAT 1 Analyzer.

3. Select the port for the instrument being updated from the “Port” drop-down list. The JammLite program will list only available ports on the computer. For updates using a network Downloader, select TCP/IP. (The TCP/IP option is available only if i-STAT 300 is selected from the “Instrument” drop down list.) Enter the IP address of the Downloader in the “IP Address” box.

4. Select the appropriate Application and CLEW from the Application and CLEW drop-down lists. Refer to the update package for the correct Application and CLEW. If the update is for CLEW only, select None for Application. Note that there are different application versions for the i-STAT 1 Analyzer, the Portable Clinical Analyzer and the Blood Analysis Module. JammLite will display all application software and CLEW appropriate for the selected instrument.

5. Click on the Update button to start the update. Appropriate instructions will be displayed. Follow the directions on the screen. The selected application and CLEW will be displayed on the Update Line.

6. During the update, do not move the analyzer or unplug the Blood Analysis Module until a screen is displayed indicating the update was successful.

7. Click on Close. The JammLite program will return to step 7 to allow any selections to be changed before starting another update.

8. When all analyzers have been updated, click on Exit or the X in the upper right corner of the DOS window.

Step (8) ***Restarting the Central Data Station***

If using a Central Data Station, re-start the software, update the Customization Profile(s) with the new CLEW and enable Customization if desired.

Central Data Station Version 4:

1. Click on the i-STAT Analyzer Customization Profile Utility icon or access by clicking Programs and i-STAT CDS.

2. Type in the Password. The default password is istat.

3. Click on Setup Mode.

4. Click on NEXT for the Language window.

5. Click on the new CLEW in the CLEW window and click on NEXT.

6. Click on NEXT in the Unit Set window.

7. Click on FINISH in the Preference window.

8. Click on FILE and Exit Program or click on the x in the upper right corner of the Utility window.

9. Click on the Central Data Station icon.

Central Data Station Version 5:

1. Click on the Central Data Station icon.

2. Click on Administration.

3. Click on Customization.

4. Type in the Password. The default password is istat.

5. Click the i-STAT Analyzer CLEW button.

6. Click the new version of CLEW and click OK.

7. If "Use Default Profile" is not check-marked beside any localization-based customization profiles, double click the box with the CLEW under the i-STAT Analyzer column (or Agilent BAM CLEW) and click the new version of CLEW.

8. Click a checkmark in the box beside Enable Customization at the top left of the window.

9. Click the x in the upper right corner of the Customization window to close it.

Step (9) ***Verifying the Update***

Run an external Electronic Simulator on updated analyzers and check the Analyzer Status page for the new Application software and/or CLEW.

TROUBLESHOOTING

PROBLEM	RECOMMENDED ACTION
The Com port to be used for the update is not listed in the Port List	Exit the JammLite program and ensure that there are no other programs running which may be using the port (such as the Central Data Station). Restart the JammLite program to determine if the port is now listed.
A message appears on the screen that the port specified for the update could not be opened.	Verify that no other programs are using the port and that the correct port was selected.
A message appears on the screen that the specified application file could not be opened, has an error, or is not a valid application file.	Verify that all other programs are closed and that the proper application was selected before re-attempting the update.
A message appears on the screen that the IR Link could not be configured to perform the application update.	Verify that the IR Link is connected to the COM port, that the LED on the IR Link is red, and that the proper port is selected.
A message appears on the screen that there was an error encountered during communication with the analyzer.	Ensure that the instrument is located properly in the IR Link or Downloader, and this it is not removed before the update is completed.
A message appears on the screen that the specified CLEW file could not be opened, has an error, or is not a valid CLEW file.	Ensure that all other programs are closed and that the correct CLEW is selected before re-attempting the update.
A message appears on the screen that the IR Link could not be configured to perform the CLEW update.	Verify that the IR Link is connected to the COM port, that the LED on the IR Link is red, and that the proper port is selected.
A message appears on the screen that the Downloader could not be configured to perform the update	Verify that the Downloader is connected to the COM port, the Downloader is powered, and that the proper port is selected.
A message appears on the screen indicating that nothing was selected for the update.	Select an Application and/or a CLEW prior to clicking on the Update button.

Quality Check Code 13 - Invalid or Expired CLEW after on-line customization is restored

If this quality check code occurs after successfully downloading new software and restoring on-line customization, the CLEW has not been updated to the new version in the Customization Profile. Update CLEW in the customization profile(s) and download the analyzers. The new CLEW will be installed in the analyzers.

Unsuccessful with Windows 95

Some computers with Windows 95 will not run JammLite. In this case, Jammit must be used to update analyzers. Before accessing the Jammit Utility, the computer must be rebooted.

ANALYZER-TO-ANALYZER SOFTWARE UPDATES

i-STAT 1 Analyzer

1 Any updated analyzer can be used as the sending analyzer. Select the Utility option under the Administration Menu on the sending analyzer. The Utility menu can be password protected. Enter the password or press the Enter key if no password has been specified. From the Utility Menu select **1-Send Software**. Select **1 – JAMS and CLEW** or **2-CLEW** as required for the update. The message "Waiting to Send" will be displayed.

2 Ensure that the receiving analyzer is off.

3 Place the sending and receiving analyzers facing each other on a flat surface about 30cm (1 foot) apart and align their IR windows. Move one analyzer toward the other until the message "Sending…" is displayed on the sending analyzer and a scrolling banner appears on the receiving analyzer.

4 Do not move the analyzers until the "Sending…" message is removed from the sending analyzer's display. The sending analyzer will return to the Send Software option and will display the result of the last software update as "Successful" or "Unsuccessful."

5 Select the Analyzer Status option under the Administration menu on the receiving analyzer and check that the new JAMS and/or CLEW are listed.

i-STAT Portable Clinical Analyzer

1 Any updated analyzer can be used as the Sending Analyzer. Run the external Electronic Simulator on the Sending Analyzer.

2 Transmit all data from the analyzer being updated (the Receiving Analyzer) to the Central Data Station. Data stored in the handheld analyzer will be lost after an application software update.

3 With the Simulator test results showing on the display of the Sending Analyzer, press and hold the DIS key and press the soft key for MENU. This displays the Utility Menu.

4 In the Utility Menu, select 3 - Send Software. The display will show the JAMS version and the CLEW in this analyzer. Verify that these are the appropriate versions. The analyzer screen will also say "Waiting to send".

5 Set both analyzers on a flat surface and align the Infrared Light-Emitting Diode (IR LED) windows so they directly face each other. (Refer to the analyzer picture on page 2-1 of the i-STAT System Manual for the location of the IR LED.)

6 On the Receiving Analyzer, make sure the display is off. Press and hold the * key and press the DIS key. The Sending Analyzer will begin sending software to the Receiving Analyzer. The display on the Sending Analyzer will change from "Waiting to send" to "Sending...", and a countdown bar will be displayed.

Note: Do not move the analyzers while the software is being sent.

7 When the display of the Sending Analyzer changes back to the Electronic Simulator result, the sending of software is complete. Do not press the DIS key on the Receiving Analyzer. Run the Electronic Simulator on the Receiving Analyzer.

8 To update software in another analyzer, repeat these instructions from Step 2.

PERFORMING A JAMS AND CLEW UPDATE ON AN i-STAT 1 ANALYZER USING THE CUSTOMIZATION WORKSPACE

1. ***Transfer the Files***

   - Place the JAMS diskette into the A: drive.
   - Click **Start ⇨ Run…**
   - Type: **a:transfer** and press the **Enter** key**.**

Note: If you do not have access to the **Run…** command, contact your Point-of-Care Coordinator or Information Technology (IT) department.

2. ***Start the Central Data Station Application (if not already open)***

   - Click on the Central Data Station icon.

3. ***Access the Customization Workspace***

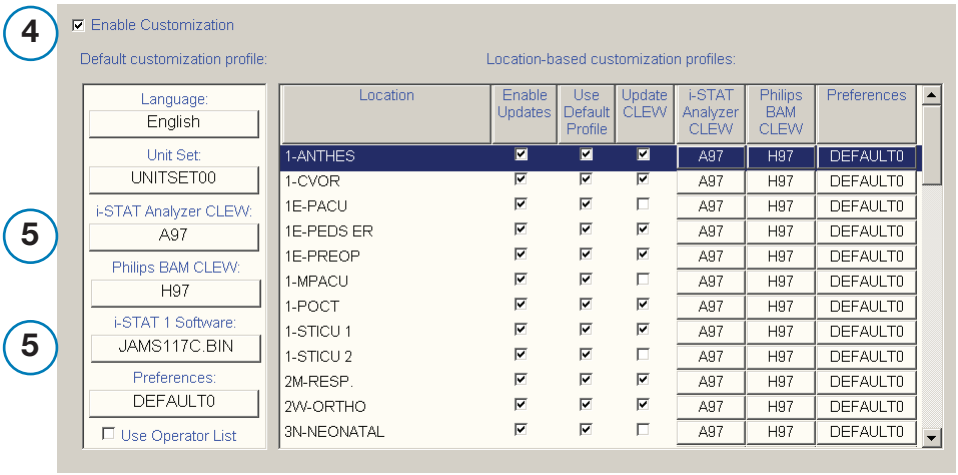
   - Click on **Main ⇨ Open Administration Function ⇨ Customization**
   - Type in the Password. The default password is **istat**.

4. ***Enable Customization***

   - If the Enable Customization box is not already checked, click the box next to this listing.
   - Under the "Location-based customization profile:" section, make sure Enable Updates is checked for every location from which you wish to perform software updates on your i-STAT 1 Analyzers.

5. ***Select the Desired Analyzer CLEW and i-STAT 1 Software***

   - Under the "Default customization profile:" column, click on the i-STAT Analyzer CLEW button. Click the new version of CLEW and click OK.
   - Under the "Default Customization profile:" column, click on the i-STAT 1 Software button. Click the new i-STAT 1 software file and click OK.



6. ***Update the Software in the i-STAT 1 Analyzer***

   - Go to the location where the i-STAT 1 Analyzers you wish to update are located.
   - Press the On/Off button on the analyzer to turn the display on.
   - Press the Menu key to bring up the Administration Menu.
   - Press 7 for Utility. The Utility menu may be password protected. Enter the password or press the Enter key if no password has been specified.
   - From the Utility Menu, select **3-Receive Software**. The "Waiting to Send" message will appear on the analyzer display.
   - Place the analyzer in the downloader or downloader/recharger. A Communication in Progress message will appear on the screen. After this message disappears, the analyzer display will stay blank for approximately 5-10 seconds. Please note that this blank screen is normal analyzer behavior during this part of the procedure.
   - A scrolling bar will then appear on the analyzer display. This bar indicates that the software is uploading into the analyzer. Do not move the analyzer while the scrolling bar appears on the display screen. When the upload process is complete, the scrolling bar will disappear and the analyzer display will again go blank for approximately 5-10 seconds. Please note that this blank screen is normal analyzer behavior during this part of the process.

- A Waiting to Send message followed by a Communication in Progress message will then appear on the analyzer display. After these messages disappear, the analyzer display will go blank, and the update process is complete.

7. ***Verify the Update***

   - Run an external Electronic Simulator on updated Analyzers and check the Analyzer Status page for the new Application software and/or CLEW.

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